

2 NON-TECHNICAL SUMMARY

This Environmental Impact Assessment report (EIAR) has been prepared to support the proposed Large-Scale Residential Development (LRD) application for residential development and associated infrastructure in the Townlands of Newtownbalregan, Castletown and Farrandreg, at Mount Avenue, Castletown, Dundalk, Co. Louth.

The EU Directive requires the production of a Non-Technical Summary as part of the production of an EIAR. The Non-Technical Summary ensures that the public is made aware of the environmental implications of any decisions on new developments to take place. The Non-Technical Summary is laid out in a similar, but summarised format to the main EIAR, describing the project, existing environment, impacts and mitigation measures.

Assessments have been conducted in an integrated, collaborative and analytical process in accordance with the Guidelines on the environmental topics to be examined. This seeks to identify the potential for significant adverse environmental impacts arising from the proposed project. Where significant adverse environmental impacts have been identified as potentially occurring during the construction and operational phases of the development, specified ameliorative, remedial or reductive measures are identified.

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2.1 Purpose of the EIAR

The objective of this EIAR is to identify and predict the likely environmental impacts of the proposed development as well as to describe the means and extent by which they can be reduced or ameliorated, to interpret and communicate information about the likely impacts; and to provide an input into the decision making and planning process.

2.2 A Note on Quotations

Environmental Impact Assessment Reports by their nature contain statements about the proposed development, some of which are positive and some less positive. Selective quotation or quotations out of context can give a misleading impression of the findings of the study.

Therefore, the study team urge that quotations should, where reasonably possible, be taken from the overall conclusions of specialists' section or from the non-technical summary, and not selectively from the body of the individual chapters.

2.3 The Requirement for an EIAR

The process to determine whether an EIA is required for a proposed development is called Screening. This is dependent on the mandatory legislative threshold requirements or the type and scale of proposed development and significance or environmental sensitivity of the receiving environment.

Annex I of the EIA Directive 85/337/EC requires as mandatory the preparation of an EIA for all development projects listed therein. Schedule 5 (Part 1) of the Planning & Development Regulations 2001-2018 brought Annex 1 of the EIA Directive directly into Irish planning legislation. The Directive prescribes mandatory thresholds in respect to Annex 1 projects. Annex II of the EIA Directive provides EU Member States discretion in determining the need for an EIA on a case-by-case basis for certain classes of project having regard to the overriding consideration that projects likely to have significant effects on the environment should be subject to EIA.

Schedule 5 (Part 2) of the Planning & Development Regulations 2001 – 2018 set mandatory thresholds for each project class. Sub-section 10(b)(iii) and (iv) addresses 'Infrastructure Projects' and requires that the following class of project be subject to EIA: (b)(i) **Construction of more than 500 dwelling units**. Category 10(b)(iv) refers to 'Urban development which would involve an area greater than 2 hectares in the case of business district, 10 hectares in the case of other parts of a built-up area and 20 hectares elsewhere.'

The proposed number of residential units is 1,058no. in total and therefore falls within the threshold requiring an EIAR as it comprises of more than 500no. dwellings or more. Furthermore the site area the proposed development is c. 38.89 Ha and therefore above the threshold requiring an EIAR as the combined area is greater than 10 Ha.

2.4 Description of Proposed Development

Site Location

The planning application site is located on the lands at Mount Avenue, Dundalk, Co. Louth in the Townlands of Newtownbalregan, Castletown and Farrandreg. The site is currently greenfield land of c. 38.89 hectares presently in agricultural use growing a variety of crops. Located approximately 0.5km east of the M1 Motorway, it is bound by Castletown Road to the north, Mount Avenue at the east, further greenfield to the south, and Greycastle Road to the west of the site.

Figure 3.1 below shows the site boundary in red. The site features the Townland hedgerow Newtownbalregan and three Trees and Woodlands of Special Amenity Value (ref. no. DLK 30, DLK 32 and DLK 54) located in the northwestern corner, at the Castletown Motte, and within the southern portion of the zoned open space around the Motte, all of which contribute to the sense of place and character of the area. Additionally, the site is near DLK 31 'De La Salle, Mill Road'.

Within the Louth County Development Plan 2021 – 2027, the site is zoned A2 – 'New Residential Phase 1', and H1 – 'Open Space'. The site is also subject to Spot Objective 3 of the County Development Plan (also Spot Objective F in the Dundalk LAP) which states;

"To require the provision of neighbourhood and community facilities in a centrally located part of the Masterplan area convenient for future residents. These facilities shall be adjacent to each other to promote synergy between the uses. The neighbourhood facilities shall consist of a Neighbourhood Centre, consisting of a local shop(s) and services with the potential uses and floorspaces to be based on the 'Generally Permitted' or 'Open for Consideration' uses for B2 Neighbourhood Centre land use zoning as set out in the County Development Plan. Community Facilities shall consist of a 1.3 hectare site to be reserved for future education facilities (i.e. school or other educational use). A playing pitch shall also be provided, with an opportunity to co-locate this pitch with the future school (education facility)."

The Development Plan was recently subject to proposed Variation No. 3 in order to update the Development Plan to account for the recently adopted Dundalk Local Area Plan 2025 – 2031. Variation 3 was made by the elected members at a Council Meeting on 20th October 2025 and is now in effect.

Within the Dundalk Local Area Plan 2025 – 2031, the site is zoned A2 and H1, with Spot Objective F which has the same requirements for community and neighbourhood facilities as noted above in Spot Objective 3 taken from the County Development Plan. Both the current Development Plan and the Dundalk Local Area Plan note a requirement for the development of a Link Street on the lands, connecting from Castletown Road to Mount Avenue.



Figure 2.1: Extract from Google Maps with the subject site outlined indicatively in red (SLA Overlay). Please refer to the enclosed Site Location Plan prepared by BKD Architects, for the definitive red line boundary of the subject site.

Proposed Development

The proposed development will comprise generally of the following: -

- 1,058no. dwellings a mixture of terraced and semi-detached houses, duplexes and apartments and a Neighbourhood Centre, ranging in height from 1 – 6 storeys as follows: -
 - 765no. houses comprising 10no. 2-bedroom single-storey houses, 34no. 2-bedroom 2-storey houses, 547no. 3-bedroom 2-storey houses and 174no. 4-bedroom 2-storey houses. Private rear gardens / patios / terraces are provided for all houses;
 - 143no. apartments accommodated in 4no. buildings 3-6 storeys in height comprising: -

- Block 1: 14no. 1-bedroom apartments, 14no. 2-bedroom apartments accommodated in 1no. 4-storey apartment block (28no. units in total).
- Block 2: 25no. 1-bedroom apartments, 13no. 2-bedroom apartments accommodated in 1no. 5-storey apartment block (37no. units in total).
- Block 3: 26no. 1-bedroom apartments, 19no. 2-bedroom apartments accommodated in 1no. 6-storey apartment block (45no. units in total).
- Block 4: 13no. 1-bedroom apartments, 19no. 2-bedroom apartments accommodated in 1no. 5-storey apartment block (32no. units in total).
- Private patios / terraces or balconies are provided for all apartments. Dedicated communal open space areas are provided to serve each apartment block;
- 150no. duplexes (33no. 1-bedroom, 75no. 2-bedroom and 42no. 3-bedroom), including 2no. duplex units (unit type Q) with an option to accommodate a childcare facility at ground floor level, accommodated in 14no. 3-storey terraces. Private patios / terraces or balconies are provided for all duplexes. Dedicated communal open space areas are provided to serve each duplex block;
- Medical/community use units (245sqm overall) at ground floor of Block 2
- 3no. retail units (929sqm overall) at ground floor levels of Blocks 3 & 4
- 1no. 2-storey childcare facility (929sqm)
- All associated and ancillary site development, infrastructural, hard and soft landscaping and boundary treatment works, including: -
 - A mobility hub with provision for EV Charging;
 - 2020no. car parking spaces including EV charging provision;
 - 1770no. cycle parking spaces;
 - Public open space (c. 5.1Ha)
 - Heritage Park (c. 5.44Ha) on the lands surrounding Cú Chulainn's Castle (Protected Structure) to the east;
 - A playing pitch (c. 5,448sq m)
 - 9no. ESB substations;
 - Bin stores;
 - Provision of a foul sewage pumping station;
 - Laying a foul rising main along Castletown Road from the proposed new access to the development eastward to the Castletown Road and Bellewsbridge Road Junction;
- 2no. new combined vehicular, cyclist and pedestrian accesses are proposed at Castletown Road and Mount Avenue;
- 1no. new cyclist and pedestrian access proposed at Mount Avenue.

Permission in this case is being sought for a duration of 10 Years.

A site (c. 1.35ha) reserved for the future development of an educational facility by others is identified in the Masterplan, but does not form part of the development being proposed at this time. In due course it is envisaged that the lands will be acquired by the Department of Education and the required education facility will be provided. The site for the school is position beside the playing pitch being included as part of the development and next to the local centre.

2.5 Examination of Alternatives (Chapter 4)

Potential alternatives to the proposed development were considered as the scheme progressed. The 'Do-Nothing' alternative was explored, with a conclusion that a do-nothing approach would be contrary to the development plan objectives for this site to deliver development at this accessible location.

A number of site layout and alternative designs were considered during the iterative design process in consultation with Louth County Council. Further design alterations were informed by the Opinion of Louth County Council on foot of LRD application meeting held on 12 June 2025.

The development as now proposed is considered to have arrived at an optimal solution in respect of making efficient use of zoned, serviceable lands whilst also addressing the potential impacts on the environment relating to residential, visual, natural and environmental amenities and infrastructure.

It is considered that the proposed development is consistent with relevant planning policy and minimises the potential for environmental impacts.

2.6 Population and Human Health (Chapter 5)

INTRODUCTION

This chapter has been prepared to assess the likely significant impacts on Population and Human Health in respect of the Proposed Development.

Human health should be considered in the context of environmental pathways which may affect health such as air quality, noise, water, and soil quality. All can contribute to negative effects on human health by facilitating the transport of contaminants or pollutants. An evaluation of the effects of these pathways on health, by considering the accepted standards of safety in dose, exposure or risk of air quality and noise levels for example, is considered appropriate, as these standards have been arrived at via scientific and medical research. Where these topics are dealt with in further detail elsewhere in this EIA Report, the relevant chapters have been cross referenced in this Chapter to provide the Planning Authority with a context for their determination.

BASELINE ENVIRONMENT

Population Health Sensitivity

The sensitivity of the surrounding area has been assessed using data from the Central Statistics Office (CSO) and Pobal.

Census data from 2016 and 2022 indicate population changes within the study area's Electoral Divisions (EDs); however, these are primarily due to boundary adjustments rather than actual demographic trends. Notably, Dundalk Rural and Castletown EDs were subdivided, and Dundalk No. 1 Urban ED experienced minor boundary changes, limiting direct comparison across years.

The Pobal HP Deprivation Index categorises the area as ranging from 'Marginally Below Average' to 'Disadvantaged', indicating moderate population sensitivity in terms of deprivation.

The age dependency ratio is low, meaning a large proportion of the population is of working age, suggesting a higher degree of self-sufficiency and resilience to change. Health data shows that 36.51% to 45.75% of the population describe their health as 'Very Good', while a low proportion report 'Bad' or 'Very Bad' health status.

Two EDs within the study area report a higher proportion of persons with a disability than the national average, indicating slightly greater restrictions on daily activity for some individuals.

Location and Character of the Local Environment

While a general study area of ED within 1 km from the site location is included for population statistics, the wider area of 2.5 km from the site location has been used to inform the baseline description of the area. In accordance with the Louth County Development Plan 2021–2027, the subject lands are located within the area of the Dundalk Local Area Plan 2025–2031. In terms of receptor sensitivity to dust

soiling, there are between 10-100 no. high sensitivity residential properties within 20m of the proposed development planning boundary.

The surrounding area is characterised by a mix of residential and commercial uses. There are several primary and secondary schools, shopping centres, healthcare services, leisure and community centres, emergency services and places of worship in the vicinity of the proposed development site.

In terms of Archaeology and Cultural Heritage, a standing stone (LH007-118006) lies within the eastern part of the site, which also overlaps the Zone of Archaeological Potential for the historic town of Castletown. Within 500 m of the site, 27 additional archaeological sites are recorded, ten of which have been preserved by record. The proposed development also adjoins Dún Dealgan, a National Monument in state guardianship (Nat. Mon. 388) and recorded motte-and-bailey castle (LH007-118007, with associated features including a souterrain and reconstructed cist burial, which are also listed as National Monuments.

The proposed development area is not located within an ACA, and there are no designated ACAs in the wider study area.

The local environment is not an area of great significance in terms of natural resources. The proposed development site is not at risk of any major accidents, hazards of natural disasters.

There are two EPA-licensed facilities within the Study Area (P0441 at 1.75 km and P0996-01 at 1.5 km). While their proximity does not necessarily imply impacts on the Proposed Development, they form part of the existing environment and must be considered for potential cumulative effects or interactions.

POTENTIAL IMPACTS OF THE PROPOSED DEVELOPMENT

Construction Phase

The main potential impacts on population and human health from the proposed development are potential for spills/leaks, air emissions, noise, visual, and traffic impacts:

- Construction will have an indirect positive effect on support industries and local services and is considered to have a positive, not significant, and long-term impact on the economy and employment of the local and wider area.
- The Proposed Development once operational will have no impact on local tourism or shopping amenities. With reference to Chapter 13 (Landscape and Visual Impact), post-construction the site will transition from agricultural land to a low- to medium-rise residential development.
- During construction, there is a risk of accidental pollution incidences to hydrology from spillage / leakage of oils, silt, fuels and concrete materials. The potential impact to human health in the absence of mitigation measures is moderate, neutral, and short-term.
- The key elements of construction of the proposed development with potential impacts on populations and human health from air quality and climate impacts are dust soiling effects, dust (PM₁₀ and PM_{2.5}) emissions, engine emissions from construction traffic and changes in traffic flows on nearby road links. In the absence of mitigation, dust impacts on Human Health are predicted to be short-term, direct, negative and slight.
- As detailed in Chapter 12 (Noise and Vibration), there is a short-term, negative and not significant impact to human health because of noise emissions from construction activities at the closest Noise Sensitive Locations (NSL). Construction vibration is expected to be negative, not significant to moderate and short-term.
- As detailed in Chapter 14 (Material Assets - Transportation), the Proposed Development's construction phase shall generate vehicular traffic comprising Heavy Goods Vehicles (HGVs), Light Goods Vehicles (LGVs), cars, and bicycles, and increasing traffic flows surrounding the site. The construction stage impact is therefore considered to be negative, temporary and less significant than the final operational stage impacts.
- There is a negligible risk of natural disasters or major accidents because of proximity to Seveso sites, and the Proposed Development is classified as appropriate for its flood zonation. The activities of the applicant's contractors during the construction phase will be conducted in

accordance with the Safety, Health and Welfare at Work (Construction) Regulations 2013 (S.I. No. 291 of 2013). The potential effect is therefore imperceptible and unlikely.

Operational Phase

The main potential impacts on population and human health from the proposed development are potential for spills/leaks, air emissions, noise, visual, and traffic impacts:

- Considering the provision of additional, high quality residential accommodation and the good level of social and community infrastructure within the area to support the Proposed Development, the impact on population will be positive, moderate and long term.
- With reference to Chapter 13 (Landscape and Visual Impact), post-construction the site will transition from agricultural land to a low- to medium-rise residential development. This change will be noticeable to adjoining residents but will be partly offset by extensive public open spaces, enhanced green infrastructure and biodiversity features, and the inclusion of a heritage park that integrates the scheme into the existing landscape. The visual impact is consistent with emerging trends toward higher-density, sustainable development that respects the site's ecological and historical context.
- With reference to Chapter 7 (Land, Soils and Geology), no groundwater abstractions or contaminated water discharges are proposed during operation, and the site contains no sensitive geological features. Following construction, no further impacts on land, soils, geology, drinking water resources, or human health are anticipated.
- With reference to Chapter 8 (Water), if surface water is not treated and managed accordingly, there is a potential impact to human health. There is also a potential risk to human health from contamination of the potable water supply by surface water or groundwater. The potential impact is slight, neutral and permanent.
- As outlined in Chapter 9 (Air Quality), a comprehensive air quality assessment was completed for the operational phase. The operational phase impact on air quality and human health resulting from increased traffic are characterized as long-term, direct, localised, negative and not significant.
- As detailed in Chapter 12 (Noise and Vibration), the main potential noise impact associated with the proposed development, relates to the generation of additional traffic caused by the new residential buildings. The predicted effects in relation to increased traffic will be neutral, negative, not significant, and long-term.
- As detailed in Chapter 14 (Traffic and Transportation on Human Health), the Proposed Development will result in changes to the existing vehicular traffic flows on the surrounding street network. The impact is deemed to be long-term, direct, localised, negative and not significant impact on human health.
- There is a negligible risk of natural disasters or major accidents because of proximity to Seveso sites, and the proposed development is classified as appropriate for its flood zonation. The potential effect is therefore imperceptible and unlikely.

MITIGATION AND RESIDUAL EFFECTS (POST-MITIGATION)

Construction Phase

The mitigation measures to address the potential impacts on Population and Human Health from the construction phase of the proposed development and post-mitigation residual effects include:

- Businesses and Residences: The contractor will establish a feedback mechanism for residents to report any concerns or issues related to construction activities. The construction contractor will engage with the community to address concerns and provide updates on mitigation efforts. The potential effect is therefore positive, not significant and short term.
- With reference to Chapter 13 (Landscape and Visual Impact), the predicted impacts from the analysis of photomontages from 15 surrounding viewpoints are short-term and negative.

- Mitigation measures detailed in Chapter 7 (Land, Soils and Geology) and Chapter 8 (Water) will ensure potential impacts on human health and populations from land and water emissions during construction are effectively managed. Measures include topsoil stripping, subsoil excavation, weather conditions, surface water runoff, dewatering, accidental spills and leaks. Best practice measures will be implemented to manage potential impacts from potential cross-contamination of the potable water supply to the construction compound. The residual effect on human health and populations from land and water emissions during the construction phase is considered to be neutral, slight, and short-term.
- Mitigation measures relating to Air Quality will focus on proactive dust and pollutant control to minimise emissions at source during construction. These measures will ensure compliance with EU ambient air quality limits set to protect human health. As a result, the predicted residual impact is direct, short-term, negative, localised and not significant.
- Mitigation measures to minimise potential noise and vibration impacts on human health during the construction phase are outlined in Chapter 12 (Noise and Vibration). These include limiting high-noise activities near sensitive boundaries and implementing best practice control measures. Provided these measures are in place, the resultant residual impact during breaking works will be negative, not significant to moderate and short-term.
- Provided the mitigation measures outlined in Chapter 14 (Material Assets - Transport) are incorporated during the construction phase, the residual impact upon the local population from traffic is predicted to be neutral and temporary.
- There is no specific mitigation measures required during construction in respect of Major Accident Hazards and Disasters.

Operational Phase

The mitigation measures to address the potential impacts on Population and Human Health from the operational phase of the Proposed Development and post-mitigation residual effects include:

- With reference to Chapter 13 (Landscape and Visual Impact), mitigation against visual impacts has been embedded in the building design and by the implementation of a comprehensive landscape strategy. The operational phase, therefore, is considered to have the potential to have a positive, not significant, long-term residual impact on the local population.
- No mitigation is required for local tourism or amenities, as impacts are positive, not significant and long term.
- Following the implementation of best practice measures detailed in Section 5.6.2.3 of Chapter 5 (Population and Human Health) will ensure adequate mitigation on any potential impacts to human health and populations from land and water emissions. The residual effect on human health and populations from land and water emissions during the operational stage is neutral, slight and long term.
- With reference to Chapter 9 (Air Quality), no additional mitigation measures are required for the operational phase of the Proposed Development. As the impact of operational traffic on air quality is predicted to be not significant in the long-term.
- As noted in Chapter 12 (Noise and Vibration), it can be concluded that, once operational, noise levels associated with the proposed development will not contribute any significant noise impact to its surrounding environment. The likely impact from mechanical and electrical services serving the proposed development will be not significant, long-term and neutral.
- The assessment of the additional traffic movements associated with the Proposed Development during the operational phase is presented in Chapter 14 (Material Assets - Transportation). With the implementation of these additional mitigation measures, the overall residual operational-phase effect of the Proposed Development on the operation of the surrounding road network shall be negative, not significant to moderate to significant and long-term.

2.7 Biodiversity (Chapter 6)

This chapter of the Environmental Impact Assessment Report (EIAR) evaluates the potential effects of the proposed Mount Avenue residential development biodiversity, including both the construction and operational phases of the project. It considers compliance with Irish and EU legislation in relation to protected sites and species. The assessment identifies the current biodiversity of the site, evaluates possible risks to protected habitats and species, and sets out the mitigation measures that will be adopted to ensure that impacts on biodiversity remains within acceptable limits.

Existing Biodiversity

The potential Zone of Influence of the project was deemed to include the site outline, the Cunnigar and Castletown streams adjacent to and downstream of the development, and consequentially the downstream estuarine and marine environments via the proposed surface water as well as the foul drainage strategy. There are seven designated sites to which indirect hydrological pathways exist. The following desktop study, walk-over assessments of the site were carried out on the 21st September 2024, 11th/23rd October 2024, 7th/15th November 2024, 4th/11th December 2024, 9th/27th January 2025, 10th February 2025, 6th/14th/19th March 2025, 7th May, 4th June and 19th June 2025.

The proposed development site consists of arable crop fields, hedgerows, treelines, scrub, mixed broadleaf woodland, grassy verges, wet grassland, bare ground, watercourses and built land. No habitats of conservation importance were noted on site. However, the mixed broadleaf woodland and watercourses would be considered to be of local ecological importance. No scheduled invasive species were recorded.

A total of 48 bird species were recorded across breeding bird and wintering bird surveys combined. In relation to wintering birds, six species listed as Qualifying Interests of Dundalk Bay SPA were recorded on, over, or adjacent to the proposed site in insignificant numbers: black-headed gull, common gull, herring gull, lapwing, oystercatcher and mallard. Additionally, four red-listed species of conservation concern in Ireland (BoCCI) were recorded: grey wagtail, meadow pipit, redwing, and snipe. Thirteen species were recorded breeding or displaying breeding behaviour, including one red-listed bird of conservation concern in Ireland (BoCCI) (yellowhammer), and four amber-listed BoCCI (linnet, spotted flycatcher, starling, willow warbler).

Three bat species were noted foraging on site (Soprano Pipistrelle, Common Pipistrelle, Lesser Noctule (Leisler's bat)). No bat emergence or trees of bat roosting potential were noted within the site outline.

An active outlier badger sett was confirmed on site along the western boundary of the site. Some evidence of foraging by badgers was observed west of this sett. No other mammals or evidence of their presence was observed within the site.

Potential Construction-Phase Impacts

During construction, site clearance and earthworks will result in a loss of existing habitats and species within the site. Works could allow silts, cement, hydrocarbons or other pollutants to enter existing watercourses and ultimately Natura 2000 sites within Castletown Estuary and Dundalk Bay. Rainwater pumped from excavations may carry suspended solids, and accidental spills of fuel could contaminate soil, surface water if not properly controlled. Wheel washing of construction vehicles also presents a potential source of silt-laden water. Machinery and works within 30 metres of the badger sett and clearance of vegetation during bird nesting season would result in negative impacts on these species. Lighting during construction could impact on foraging activity. Without appropriate measures, these activities could have a short-term moderate impact on local biodiversity and nearby European Sites.

Potential Operational Impacts

Once constructed all onsite drainage will be connected to separate foul and surface water systems. Surface water runoff will comply with SUDS. Key habitats including the Cunnigar Stream, Castletown Stream and mixed broadleaf woodland, will be maintained. The biodiversity value of the site would be expected to improve as the landscaping matures. Given that it is proposed to discharge surface water drainage to the Cunnigar and Castletown streams, in the absence of mitigation, there is the potential for downstream impacts on aquatic biodiversity and designated sites via contaminated surface water runoff which may enter the Cunnigar Stream and/or Castletown Stream during operation.

The landscape plan incorporates the required 30 m buffer zone to facilitate continuation of the badger sett as an active resting place and facilitates corridors for movement of badgers to and from the sett through the site and to surrounding areas. The riparian corridor of the Cunnicar and Castletown Streams, a number of hedgerows, as well as the mixed broadleaf woodland in the northwest of the site, are to be maintained. Landscaping will increase flora diversity on site through planting of a variety of native species and habitats. The retention of hedgerows and treelines around the periphery of the site will maintain the primary bat foraging corridors. Lighting has been implemented to prevent light spill along these corridors. However, development and lighting within the site will displace open areas available for bat foraging. There will be reduced overall foraging habitat for wintering birds within the site during operation compared to present levels. However, the site is currently of low value for foraging by wintering bird species. The development will result in increased breeding opportunities for bird species once buildings are erected and landscaping matures.

Mitigation and Management Measures

Following implementation, monitoring and enforcement of all mitigation measures outlined within the accompanying NIS, EclA and CEMP, no significant negative impacts on biodiversity as a result of the construction and operation of the proposed development are foreseen.

Residual Effects and Monitoring

The overall residual impact on the ecology of the proposed development will result in a low Adverse / Negative/ site/ not significant / long term impact on the ecology of the area and locality overall. This is primarily as a result of the loss of terrestrial habitats including arable land and hedgerows on site, off-set by the creation of an improved biodiversity focused landscape plan incorporating additional habitats, standard construction and operational controls and a sensitive native planting strategy. No significant impacts on any designated sites and their associated habitats and species are foreseen.

Conclusion

A number of species of conservation significance are present within the site. The proposed development and its landscape, services and lighting plans have been designed to facilitate the continuation of these species within the site during construction and operation. With the proposed mitigation and monitoring measures in place, the proposed development is not expected to give rise to any significant adverse effects on biodiversity as a result of construction or operation.

2.8 Land, Soil & Geology (Chapter 7)

This chapter of the Environmental Impact Assessment Report (EIAR) evaluates the potential effects of the proposed residential development at Mount Avenue, Dundalk, on land, soils and the geological environment. It outlines the measures that will be implemented to avoid, reduce or remedy any adverse effects that could arise during the construction and operation of the project.

The proposed scheme occupies approximately 38.89 hectares of land located to the west of Dundalk. The development will provide a new residential neighbourhood together with internal roads, drainage infrastructure, underground surface-water attenuation systems, landscaped public open spaces and a network of services and utilities.

Baseline Site Conditions

A detailed description of existing site conditions was established through a combination of desk studies and site investigations. Data from the Geological Survey of Ireland (GSI) were reviewed alongside the results of a preliminary ground investigation undertaken in June 2025.

Eighty-six trial pits were excavated across the lands to depths of up to three metres. These investigations revealed a shallow topsoil layer typically ranging from 0.2 to 0.4 metres in thickness. Beneath the topsoil lie layers of firm to stiff gravelly clay and sandy gravel with occasional cobbles and boulders. The cohesive subsoils are characteristic of the Ballylanders soil series, which is generally well drained and of fine loamy texture. In a small number of locations, made ground deposits were encountered to depths exceeding 0.6 metres.

Bedrock beneath the site consists of calcareous red-mica greywacke, a green-grey formation of coarse and fine-grained greywacke and siltstone with thin sandstone units. This formation is interpreted as a sequence of proximal and distal turbidites and is classified by the GSI as a poor aquifer, meaning that it is generally unproductive except in localised zones. Groundwater vulnerability across the site varies from moderate to high, reflecting the depth and permeability of the overlying soils. According to Environmental Protection Agency (EPA) mapping, the wider Dundalk area has a moderate radon risk, with approximately 10% of homes predicted to exceed the national reference level of 200 Bq/m³.

Characteristics of the Proposed Works

The development will involve the stripping of the topsoil across the site and the excavation of subsoil to accommodate foundations, roads, underground drainage and attenuation structures. It is estimated that approximately 98,000 m³ of topsoil will be handled during the works. All stripped topsoil will be reused within the site for landscaping of gardens, public open spaces and roadside verges, thereby reducing the need for off-site disposal.

Approximately 107,000 m³ of subsoil will be excavated, of which the majority will be reused as engineered fill beneath roads or within landscaped areas. Only around 10,000 m³ of material is expected to be unsuitable for reuse and will be removed to an approved facility. Where bedrock is encountered, it will be crushed, screened and tested for suitability as fill, further minimising the need for importation of material. Finished site levels have been carefully designed to optimise cut and fill balances and to reduce the transport of soil to and from the site.

Potential Construction-Phase Impacts

The principal impacts on land and soils will occur during the construction phase, when the removal of topsoil and excavation of subsoil will expose underlying materials to weather and traffic. Without management, these activities could lead to erosion, generation of sediment-laden runoff, and minor dust emissions. Construction traffic and the movement of earth-moving plant may result in rutting of exposed soils and temporary deposition of sediment on adjacent roads. Storage and handling of fuels, oils, concrete and other construction materials present a risk of accidental spills or leaks, which could contaminate soils or groundwater if not properly controlled. These potential effects are expected to be slight and short-term provided that mitigation measures are fully implemented.

Disturbance of the geological environment is expected to be limited. The preliminary investigations indicate that bedrock is generally deep and that excavations associated with the development of the site have been designed as shallow as possible. Impacts on bedrock geology are therefore predicted to be neutral.

Operational and Cumulative Effects

Given the scale of the proposed development and the capacity of the surrounding environment to accommodate developments of this nature, it is considered that the overall cumulative development in this area will have a moderate, long-term impact on the land, soils and geology of the area via the proposed structures, roads, infrastructure etc on the subject site. However, with the detailed mitigation measures in place, as required under this EIAR and in the following section, the overall impact on land and soils will be permanent, not significant and have a neutral effect.

Mitigation and Management Measures

Mitigation measures will be implemented to prevent or reduce potential impacts during construction.

Topsoil stripping will be phased and carefully controlled so that only the immediate work areas are exposed at any given time. Stockpiles of topsoil and subsoil will be clearly separated, protected and monitored to prevent erosion, cross-contamination or sediment runoff. Exposed soils will be stabilised as soon as practicable through backfilling of service trenches, construction of road capping layers and progressive landscaping.

Surface water from stripped areas and excavations will be captured and treated in on-site settlement ponds lined with geotextile and fitted with riprapped inlets and outlets to trap sediment before controlled discharge. Pumped rainwater or groundwater will also be directed to these ponds. Construction plant will follow predetermined haul routes, and wheel-wash facilities and road sweeping

will be provided to maintain the cleanliness of the surrounding road network. During dry periods, dust suppression measures such as dampening down will be employed.

To guard against accidental spills, all fuels, oils and chemicals will be stored in secure bunded areas, with refuelling and servicing of machinery confined to designated hardstand zones. A spill response procedure will be in place, and spill kits will be available at all times. A detailed Construction and Environmental Management Plan (CEMP) will oversee site operations, covering sediment control, waste management, monitoring of excavations and stockpiles, and emergency procedures.

Residual Effects

Implementation of the mitigation measures specified will ensure that the potential impacts of the proposed development on land, soils and the geological environment will be avoided, remedied or minimised. The residual impact is not significant for the construction phase, and any residual impacts will be short term, and neutral.

The primary residual impact is the removal of material unsuitable for reuse as fill material. This impact is unavoidable given the nature of the proposed development. With the implementation of all mitigation measures these effects will be slight short-term effects that should have a neutral impact on the surrounding environment.

2.9 Water (Chapter 8)

This chapter of the Environmental Impact Assessment Report (EIAR) evaluates the potential effects of the proposed Mount Avenue residential development on surface water and groundwater, including both the construction and operational phases of the project. It considers compliance with the EU Water Framework Directive and the need to prevent any deterioration of local water quality or increase in flood risk. The assessment identifies the key hydrological features of the site, evaluates possible risks to human health and the natural environment, and sets out the mitigation measures that will be adopted to ensure that all drainage and water-related impacts remain within acceptable limits.

Existing Hydrological Environment

The 40-hectare site lies within the Castletown River catchment, approximately 5.6 kilometres west of the coast. Two watercourses—the Cunnicar Stream to the northwest and the Castletown Stream to the south of the site—flow across the boundaries of the site before joining the Castletown River, which ultimately discharges to the sea. A topographical survey shows that the site falls from the crest of Cú Chulainn's Castle eastward and southward towards these streams, creating natural overland flow paths. The topography naturally divides the lands into a northern catchment, draining towards the Cunnicar Stream, and a southern catchment, draining towards the Castletown Stream.

Ground conditions were investigated through site walkovers, desk studies and a detailed ground investigation in late 2024. The Geological Survey of Ireland classifies the bedrock aquifer beneath the site as a poor aquifer—generally unproductive except in localised zones—while groundwater vulnerability ranges from moderate to high, with extreme vulnerability in small pockets where rock lies close to the surface. Eight soakaway tests did identify seven locations where infiltration can occur. These findings informed the design of the surface water management strategy. A review of Office of Public Works (OPW) flood hazard mapping and the Catchment Flood Risk Assessment and Management (CFRAM) studies shows that almost all of the site lies within Flood Zone C, the lowest category of flood risk. Only small peripheral areas fall within Zones A or B, and these have been incorporated into open space where occasional flooding would not cause harm to any buildings. Updated flood mapping from Louth County Council in September 2025 indicates even lower flood levels than previously recorded.

Proposed Development and Drainage Strategy

The proposed development comprises 1,058no. dwellings (765no. houses, 150no. duplex units, and 143no. apartments) including 2no. duplexes with an option to accommodate a childcare facility at ground floor level; a local centre comprising ground floor retail units, a medical unit, and mobility hub; provision of a childcare facility; all in buildings ranging in height from 1 to 6 storeys. All associated and

ancillary site development and infrastructural works, hard and soft landscaping and boundary treatment works, including public, communal and private open space; public lighting; surface car parking spaces; bicycle parking; ESB substations; bin stores; provision of a foul sewage pumping station; laying a foul rising main along Castletown Road from the proposed new access to the development eastward to the Castletown Road and Bellewsbridge Road Junction. The proposed development will be accessed from two new combined vehicular, cyclist and pedestrian junction at Castletown and at Mount Avenue. A separate pedestrian and cyclist access is also provided at Mount Avenue. A Heritage Park, a playing pitch and a site reserved for a future educational/school facility are also being provided.

The development will be served by a Sustainable Drainage System (SuDS) which separates the site into the two natural catchments. Attenuated surface water from the northern catchment will discharge to the Cunnigar Stream, while flows from the southern catchment will discharge to the Castletown Stream, and ultimately to the Castletown River.

The proposed development is located on a site 38.89 Ha in size with a net developable area of approximately 29.53 Ha, in the Townlands of Newtownbalregan, Castletown and Farrandreg, at Mount Avenue, Castletown, Dundalk, Co. Louth.

Discharge from the site will be restricted to greenfield runoff rates in accordance with the Greater Dublin Strategic Drainage Strategy (GDSDS). Hydrobrake or similar flow-control devices will limit the northern catchment discharge to 27 l/s and the southern catchment discharge to 29 l/s, giving a total allowable outflow of 56 litres per second for the entire site. To achieve these limits, the network provides approximately 7,906 cubic metres of attenuation storage, sufficient to accommodate a 1-in-100-year storm event with a 20% allowance for climate change. The drainage system also incorporates overland flood routes along estate roads to convey excess flows safely to the outfalls in the event of extreme rainfall beyond the 1-in-100-year design standard.

SuDS features will include permeable paving, tree pits, rain gardens, swales and detention basins, all designed in line with the CIRIA SuDS Manual and Nature-Based Solutions guidance. These elements will filter and slow runoff, ensuring that only clean, attenuated surface water is discharged to the receiving streams.

Potential Construction-Phase Impacts

During construction, site clearance, earthworks and the installation of underground services could allow silts, cement, hydrocarbons or other pollutants to enter existing watercourses. Rainwater pumped from excavations may carry suspended solids, and accidental spills of fuel could contaminate soil, surface water or groundwater if not properly controlled. Wheel washing of construction vehicles also presents a potential source of silt-laden water. Without appropriate measures, these activities could have a short-term moderate impact on the local hydrological environment.

Flooding during construction is not expected, but infiltration of groundwater into excavations could occur locally. There is also a potential risk of cross-contamination of the temporary potable water supply to the site compound.

Potential Operational Impacts

Once the development is complete, the main risks relate to the increase in impermeable surfaces, which could reduce natural groundwater recharge and increase surface water runoff if not managed. Hydrocarbon leaks from parked vehicles or accidental spills during maintenance could also enter the surface water drainage system. However, because the drainage design restricts discharge to greenfield rates, incorporates a full SuDS treatment train, and includes bypass separators, these risks are considered slight, long-term and neutral.

The new potable water supply will be delivered through a modern, fully sealed network designed to Uisce Éireann standards, which minimises any risk of contamination. The foul drainage system will connect to the public network via a combination of gravity pipes and a pumping station which will connect the northern catchment to an existing foul sewer on Mount Avenue Road. Confirmation of feasibility and a Statement Of Design Acceptance (SODA) have been received from Uisce Éireann.

Mitigation and Management Measures

Mitigation measures will be implemented during construction to prevent pollution and control runoff:

A Construction and Environmental Management Plan (CEMP) will govern all site activities, setting out best practice for sediment control, waste management and emergency response.

All water pumped from excavations or stripped areas will pass through on-site settlement ponds before controlled discharge.

Oils, fuels and chemicals will be stored in bunded hardstand areas, with refuelling confined to designated locations away from surface water inlets. Spill kits will be available on site at all times.

Concrete batching will occur off site, and truck washout will be strictly controlled to prevent any release of cementitious water.

Weather forecasts will be considered when scheduling topsoil stripping and excavation to reduce erosion risk.

During operation, the drainage system will require regular inspection and maintenance of hydrobrakes, attenuation tanks, SuDS features and bypass separators to reduce chances of blockages. Overland flood routes will remain unobstructed, and road levels have been designed to replicate existing surface contours so that natural flow paths drain towards the existing watercourses as they originally would have.

Residual Effects and Monitoring

With the mitigation measures in place, residual impacts on water and groundwater during construction will be slight, neutral and short-term. During operation, residual impacts will remain slight, neutral and long-term, reflecting the increase of hardstanding area from greenfield. Monitoring will include routine inspection of settlement ponds, fuel separators, SuDS features and road surfaces during construction, with ongoing maintenance for all drainage components once the development is occupied.

Conclusion

The Mount Avenue development has been designed in accordance with the Greater Dublin Strategic Drainage Strategy, the CIRIA SuDS Manual, and The Planning System and Flood Risk Management – Guidelines for Planning Authorities. By incorporating SuDS features, controlled discharge rates and construction management practices, the project will protect local water quality, avoid increasing flood risk and ensure compliance with all relevant environmental standards. With the proposed mitigation and monitoring measures in place, the development is not expected to give rise to any significant adverse effects on the surface water or hydrogeological environment during either construction or operation.

2.10 Climate (Air Quality) (Chapter 9)

The assessment of Air Quality is contained within Chapter 9. The air quality assessment has focussed on:

- Potential construction dust emissions and impacts to nearby sensitive receptors such as residential properties, schools, hospitals, etc.
- Potential vehicle emissions from traffic accessing the site for construction works and during operation.

Existing Environment

Baseline data and data available from similar environments indicates that levels of nitrogen dioxide (NO₂), particulate matter less than 10 microns (PM₁₀) and particulate matter less than 2.5 microns (PM_{2.5}) and are generally well below the current National and European Union (EU) ambient air quality standards.

Impact Assessment

Do Nothing Scenario

In the Do Nothing scenario, the site will remain unchanged, and air quality will follow existing trends. These trends may be influenced by nearby developments and traffic. Since the site is zoned for development, a similar project is likely to be built in the future. As a result, air quality impacts are expected, even without the proposed development and will be direct, long-term and negative which is overall not significant.

Construction Phase

An assessment of the potential dust impacts as a result of the construction phase of the proposed development was carried out based on the UK Institute for Air Quality Management 2024 guidance document 'Guidance on the Assessment of Dust from Demolition and Construction'. This established the sensitivity of the area to impacts from construction dust in terms of dust soiling of property and human health effects. The surrounding area was assessed as being of high sensitivity to dust soiling and of low sensitivity to dust-related human health effects.

The sensitivity of the area was combined with the dust emission magnitude for the site under four distinct categories: demolition, earthworks, construction and trackout (movement of vehicles) to determine the mitigation measures necessary to avoid significant dust impacts. It was determined that there is a high risk of dust related impacts associated with the proposed development. In the absence of mitigation there is the potential for direct, short-term, negative and slight impacts to air quality, which is an overall not significant impact in EIA terms.

In addition, construction phase traffic emissions have the potential to impact air quality, particularly due to the increase in the number of HGVs accessing the site. Construction stage traffic did not meet the scoping criteria for a detailed modelling assessment outlined in Transport Infrastructure Ireland's 2022 guidance document 'Air Quality Assessment of Specified Infrastructure Projects – PE-ENV-01106'. As a result, a detailed air assessment of construction stage traffic emissions has been scoped out and the construction stage traffic emissions will have a short-term, neutral and imperceptible impact on air quality, which is an overall not significant impact in EIA terms.

Operational Phase

Operational phase traffic has the potential to impact air quality due to vehicle exhaust emissions as a result of the increased number of vehicles accessing the site. Operational stage traffic emissions were calculated at representative worst-case receptors in the area, and it was determined that concentrations of NO₂, PM₁₀ and PM_{2.5} will increase by an imperceptible amount as a result of the proposed development. Operational stage traffic emissions will have a long-term, direct, localised, negative and not significant impact on air quality.

Cumulative Impact

There is the potential for cumulative impacts to air quality should the construction phase of the proposed development coincide with that of other developments within 500 m of the site. A review of proposed/permitted developments in the vicinity of the site was undertaken.

The dust mitigation measures outlined in Section 9.8.1 of Chapter 9 will be applied during the construction phase which will avoid significant cumulative impacts on air quality. With appropriate mitigation measures in place, the predicted cumulative impacts on air quality associated with the construction phase of the proposed development is deemed direct, short-term, negative and not significant.

Operational phase direct impacts on air quality associated with the proposed development and cumulative traffic emissions are predicted to be long-term, direct, localised, negative and overall, not significant.

Overall, no significant cumulative impacts to air quality are predicted during the construction or operational phases of the proposed development.

Mitigation

Construction Phase

Detailed dust mitigation measures are outlined within Section 9.8.1 of Chapter 9 to ensure that no significant impacts as a result of construction dust emissions occurs at nearby sensitive receptors.

Once these best practice mitigation measures, derived from the Institute for Air Quality Management 2024 guidance 'Guidance on the Assessment of Dust from Demolition and Construction' as well as other relevant dust management guidance, are implemented the impacts to air quality during the construction of the proposed development are considered, short-term, direct, negative and imperceptible, which is overall not significant in EIA terms, posing no nuisance at nearby sensitive receptors (such as local residences).

Operational Phase

No site-specific mitigation measures are proposed for the operational phase. The impact to air quality has been assessed as long-term, direct, localised, negative and overall, not significant

Residual Impact Assessment

When the dust mitigation measures are implemented, the residual effect of fugitive emissions of dust and particulate matter from the site will be short-term, direct, localised, negative and not significant.

The impact to air quality during the operational phase of the proposed development as a result of emissions from vehicles accessing the site have been assessed as having a short-term, direct, localised, negative and not significant.

Monitoring

Monitoring of the dust mitigation measures will be required as set out in Section 9.10.1 of Chapter 9 and the Construction Environmental Management Plan. The monitoring requirements will ensure that the dust mitigation measures are working satisfactorily.

2.11 Climate (Climate Change) (Chapter 10)

The assessment of Climate is contained within Chapter 10. The impact assessment included the following:

- The potential greenhouse gas emissions during the construction and operational phases of the development.
- The vulnerability of the project to climate change, including considerations for increased rainfall and other projected climate impacts.
- The design measures to enhance the project's resilience to future climate risks, such as incorporating drainage systems for increased rainfall.

Existing Environment

The existing climate baseline can be determined by reference to data from the EPA on Ireland's total greenhouse gas (GHG) emissions and alignment with Ireland's 2030 sectoral emissions ceilings and carbon budgets. The EPA state that Ireland had total GHG emissions of 57.6 Mt CO₂e in 2024. This is 1.03 Mt CO₂e higher than Ireland's annual target for emissions in 2024. EPA projections indicate that Ireland has used 82.8% of the 295 Mt CO₂e Carbon Budget for the five-year period 2021-2025. This leaves 17.2% of the budget available for 2025, requiring a substantial 10.3% annual emissions reduction for 2025 to stay within budget.

Impact Assessment

The potential impacts on climate have been assessed in two distinct ways – a greenhouse gas assessment (GHGA) and a climate change risk assessment (CCRA). The GHGA quantifies the GHG emissions from a project over its lifetime and compares these emissions to relevant carbon budgets, targets and policy to contextualise magnitude. The CCRA considers a projects vulnerability to climate change and identifies adaptation measures to increase project resilience.

The impact of the construction and operation of the proposed development on Ireland's total national greenhouse gas emission is compared to Ireland's 2024 total greenhouse gas emissions, the relevant sectoral emissions ceilings and 2030 carbon budgets. Any adverse impacts are predicted to primarily occur during the construction phase, with the dominant sources of greenhouse gas emissions as a

result of the development due to the embodied carbon associated with the building materials for the proposed development.

Do Nothing Scenario

In the Do-Nothing scenario, the site will remain as per the baseline and will change in accordance with trends within the wider area (including influences from potential new developments in the surrounding area, changes in road traffic, etc).

As the site is zoned for development, it is likely that in the absence of the proposed development a development of a similar nature would occur. Therefore, the predicted climate impacts within this report are likely to occur even in the absence of the proposed development.

Greenhouse Gas Assessment

Construction Phase

Calculation of the GHG emissions associated with the construction of the proposed development was calculated using information the OneClick LCA 3D Carbon Designer tool and the online Transport Infrastructure Ireland Carbon Tool. The GHG emissions associated with the proposed development are predicted to be a small fraction of Ireland's 2030 carbon budget of 27.7 MtCO₂e and a small fraction of the relevant sectoral 2030 emissions ceilings. The proposed development will incorporate some mitigation measures which will aim to reduce climate impacts during construction and once the development is operational. At a minimum these include the Nearly Zero Energy Building (NZEB) compliance and targeting a Building Energy Ratio (BER) in line with the NZEB requirements.

Operational Phase

GHG emissions during the operational phase due to road traffic were assessed. Modelling of operational CO₂e emissions from traffic associated with the proposed development on the surrounding road network was undertaken as per Transport Infrastructure Ireland (TII) 2022 guidance "PE-ENV-01104: Climate Guidance for National Roads, Light Rail and Rural Cycleways (Offline & Greenways) – Overarching Technical Document". It was concluded that traffic related CO₂e emissions will not have a significant impact on climate due to the low-level changes in emissions.

GHG Assessment Significance of Effects

The TII PE-ENV-01104 guidance states that the following two factors should be considered when determining significance:

- The extent to which the trajectory of GHG emissions from the project aligns with Ireland's GHG trajectory to net zero by 2050; and
- The level of mitigation taking place.

The level of mitigation proposed for the development has been taken into account when determining the significance of the proposed development's GHG emissions. Based on the carbon emissions intensity and proposed mitigation measures, it can be concluded that the proposed development is aligned with Ireland's GHG trajectory to net zero by 2050. Therefore, according to the TII significance criteria, the significance of the GHG emissions during the construction and operational phase is minor adverse. The proposed development has mitigated some GHG impacts where possible. In accordance with the EPA guidelines the above significance equates to a significance of effect of GHG emissions during the construction and operational phase, which is direct, long-term, negative and slight, which is overall not significant.

Climate Change Risk Assessment

A CCRA was conducted to consider the vulnerability of the proposed development to climate change, as per the TII 2022 PE-ENV-01104 guidance. This involves an analysis of the sensitivity and exposure of the development to future climate hazards which together provide a measure of vulnerability. The hazards assessed included flooding (coastal, pluvial, fluvial); extreme heat; extreme cold; drought; extreme wind; lightning, hail and fog; wildfire and landslides. The proposed development is predicted to have at most low vulnerabilities to the various climate hazards and therefore climate change risk is considered direct, long-term, negative and imperceptible, which is considered overall not significant with regard to the construction and operational phase.

Overall, no significant impacts to climate are predicted during the construction or operational phases of the proposed development.

Cumulative Impact

With respect to the requirement for a cumulative assessment PE-ENV-01104 states that “the identified receptor for the GHG Assessment is the global climate and impacts on the receptor from a project are not geographically constrained, the normal approach for cumulative assessment in EIA is not considered applicable. By presenting the GHG impact of a project in the context of its alignment to Ireland’s trajectory of net zero and any sectoral carbon budgets, this assessment will demonstrate the potential for the project to affect Ireland’s ability to meet its national carbon reduction target. This assessment approach is considered to be inherently cumulative”.

As a result, the cumulative impact of the proposed development in relation to GHG emissions is considered direct, long-term, negative and slight, which is overall not significant in EIA terms.

Mitigation

Incorporated Design

A number of mitigation measures have been incorporated into the design of the proposed development. The development will be in compliance with the requirements of the Near Zero Energy Building (NZEB) Standards and will achieve a Building Energy Rating (BER) in line with the NZEB requirements. Additionally, other measures have also been incorporated into the design of the proposed development to mitigate the impacts of future climate change. To address future climate change risks, the design includes mitigation measures such as attenuation of surface water runoff and storage of runoff from a 1% AEP event to avoid potential flooding impacts.

Construction Phase

A number of best practice mitigation measures are proposed for the construction phase of the proposed development to ensure that impacts to climate are minimised.

Operational Phase

During the operational phase the primary focus will be on operational energy usage and outlined through the incorporated design mitigation. Sustainable travel modes will be encouraged through support facilities for cycling, and infrastructure for electrical vehicle charging points.

Residual Impact Assessment

The impact to climate as a result of a proposed development must be assessed as a whole for all phases. The proposed development will result in some impacts to climate through the release of GHGs. TII PE-ENV-01104 guidance references the ISEF guidance which states that the crux of assessing significance is “not whether a project emits GHG emissions, nor even the magnitude of GHG emissions alone, but whether it contributes to reducing GHG emissions relative to a comparable baseline consistent with a trajectory towards net zero by 2050”. The proposed development has proposed some best practice mitigation measures and is committing to reducing climate impacts where feasible. Once mitigation measures are put in place, the effect of the proposed development in relation to GHG emissions is considered direct, long-term, negative and slight, which is overall not significant in EIA terms.

In relation to climate change vulnerability, it has been assessed that there are no significant risks to the proposed development as a result of climate change. The residual effect of climate change on the proposed development is considered direct, long-term, negative and imperceptible, which is overall not significant in EIA terms.

Monitoring

Monitoring and reporting of embodied carbon of construction materials, water usage, power and fuel usage, and waste generation (including reuse and recycling rates) is recommended for the construction phase of the proposed development.

2.12 Climate (Daylight and Sunlight) (Chapter 11)

Digital Dimensions have been commissioned to assess any potential effect on the Daylight and Sunlight of neighbouring properties. This section has been prepared by John Healy - Diploma Architectural Technology, M.Sc Environmental Design of Buildings, PG Dip Digital Media. John has experience of working as a Daylight and Sunlight consultant for in excess of 15 years.

Daylight

The potential for a development to result in impacts to daylight diminishes with distance. The relationship is such, that at three times the height of the building away from the development there will be no noticeable change in daylight levels to neighbouring windows. This is called the zone of influence.

If the zone of influence reaches a wall of an existing building, which has a window, that window is examined in section. This analysis is done by taking a section through the lowest window and drawing a line through it at approximately eye level (1.6m). An angle is taken from this line at 25°. If this line does not intersect with a structure in the proposed development, then the effect on the daylight that the window receives will be negligible.

If the window is on a façade with a number of windows, the closest window is examined. If the effect on the closest window is found to be negligible, then the effect on the windows that are further away will also be negligible.

Over most of the site, there are no existing or permitted buildings within the zone of influence of the proposed development, in which case, there will be no noticeable change in daylight levels to neighbouring windows.

As this is a large site, areas there are areas where the zone of influence of the proposed development reaches or lies close to neighbouring windows. These areas, shown in detailed plans 1 – 3, are subject to further assessment. In the closest houses the ground floor windows are examined in section. The effect on the available daylight received by all windows assessed is found to be negligible.

The effect on daylight at the point of the completion of all three developments represents the greatest obstruction to daylight. This does not change over time, when the development is occupied.

Sunlight

Digital Dimensions have been commissioned to assess any potential effect on the Sunlight of neighbouring properties. This section has been prepared by John Healy - Diploma Architectural Technology, M.Sc Environmental Design of Buildings, PG Dip Digital Media. John has experience of working as a Daylight and Sunlight consultant for in excess of 15 years.

The 21st of March (Equinox) is the recommended day for which to prepare shadow plots as it gives an average level of shadowing. This is a large site, over most of the site, on March 21st, there is no additional shading to adjacent buildings or residential amenity areas. Over the course of the year, the effects from shadows of the proposed development is neutral.

This is a large site, three areas are examined closely in detailed areas 1 – 3. In detailed areas 1 and 3, the effects from shadows of the proposed development are brief and not significant. In detailed area 2, the effects from shadows of the proposed development are brief and slight.

The effect on sunlight at the point of the completion of all three developments represents the greatest obstruction to daylight. This does not change over time, when the development is occupied.

2.13 Air (Noise & Vibration) (Chapter 12)

INTRODUCTION

Potential Impact of the Proposed Development

Construction Stage

Construction noise impacts will vary at various receivers throughout the construction phase of the proposed development. The main construction activities in relation to noise are:

- Break Out Works
- Piling and Excavation
- General Construction

Without mitigation the worst-case potential effect of the construction phase will be short term, negative and significant to very significant, during breaking out works at distances up to 50m from areas of break-out works.

Operational Stage

The noise impacts relating to the operational phase of the proposed development will relate to:

- Mechanical Plant and Services
- Additional Traffic on Public Roads
- Outdoor creche activities

The noise impacts related to mechanical plant and services will be neutral, not significant, and long-term, provided they are designed to meet the operational limits set by the guidelines and recommendations within the EIAR chapter. The noise impacts related to additional road traffic on public roads will be long-term, negative, and not significant. The noise impacts related to outdoor creche activities will be long-term, negative, and not significant on the nearest residences incorporated in the proposed development. For noise sensitive locations external to the development, effects long-term, neutral, and not significant. A full inward noise impact relating to the noise incident on the proposed development site is included within Chapter 12.

Mitigation and Residual Effects

Construction Phase

Mitigation measures to be implemented during the construction phase are discussed within the full EIAR, these measures include but are not limited to:

- Selection of quiet plant;
- Control of noise sources;
- Screening;
- Hours of work;
- Liaison with the public; and
- Monitoring.

After mitigation, it is anticipated that the residual worst-case effects of the construction phase noise will be short-term, negative, and moderate to significant and temporary.

Operational Phase

Mitigation measures to be implemented during the operational phase are discussed within the full EIAR these measures mainly relate to the selection of quiet plant as well the suppression of break out noise from items of mechanical plant, where required. The residual operational noise impact in relation to the mechanical plant and services noise will be neutral, imperceptible and long term.

The residual impact of the traffic on the surrounding road will be negative, not significant and long term.

The EIAR provides a detailed Inward Impact Assessment to account for the noise climate taking into account the local road networks and rail networks likely to affect the proposed development. The Inward Impact Assessment within the EIAR provides details on acoustic performance to glazing and ventilation for various facades within the proposed development.

Cumulative Impact of the Proposed Development

Construction Phase

In the event that construction activities at nearby sites are taking place concurrently with the construction of the proposed development, there is potential for cumulative noise impacts to occur. Due to the nature of construction works associated with each site of the proposed development, noise levels from this site will dominate the noise environment when occurring in proximity to the closest noise sensitive locations along its immediate boundary. The noise contribution from other construction sites would need to be equal to those associated with the closest site in order to result in any cumulative effect.

Operational Phase

The noise limits set within the EIAR are designed to avoid any significant increase in the prevailing background noise environment. There is not expected to be a cumulative effect in relation to either operational mechanical plant noise or road traffic noise during the operational phase of the proposed development.

2.14 Landscape and Visual Impact Assessment (Chapter 13)

The LVIA Report reviewed the existing landscape with respect to existing designations, views and prospects, landscape character, presence of National Monuments, location with respect to existing adjoining residential development and impacts of the proposed development on the existing landscape setting and features.

Lands at Mount Avenue, Castletown, Dundalk, Co. Louth

Located approximately 0.5km east of the M1 Motorway, the site is bound by Castletown Road to the north, Mount Avenue at the east, further greenfield to the south, and Greyacre Road to the west of the site.

Within the Louth County Development Plan 2021 – 2027, the site is zoned A2 – ‘New Residential Phase 1’, H1 – ‘Open Space’, and G1 – ‘Community Facilities’. Similarly, within the Dundalk Local Area Plan 2025 – 2031, the site is zoned A2 and H1, with Spot Objective F stating requirements for community and neighbourhood facilities. Both the Development Plan and the Dundalk Local Area Plan note a requirement for the development of a Link Street on the lands, connecting from Castletown Road to Mount Avenue.

The landscape character of the site is largely determined by the following:

The site is currently greenfield agricultural land of c. 39.73 hectares bounded by hedgerows. Areas of woodland and wet grassland are also present on site. The Castletown River borders the north western boundary and a riparian buffer is in place.

The site features the Townland hedgerow Newtownbalregan and three Trees and Woodlands of Special Amenity Value (ref. no. 30, 32, 54) located in the north western corner, at the Castletown Motte, and within the southern portion of the zoned open space around the Motte, all of which contribute to the sense of place and character of the area.

An important landmark in the area is Cúchulainn's Castle, which stands on top of the mound of Castletown Motte, which is a national monument, it is surrounded by Trees of Special Amenity Value. The Stone of Lingadan/Standing Stone, located within the site is listed as a protected structure. The Stone of Lingadan is safeguarded for its archaeological and historical significance. There are four scheduled monuments in the vicinity of the Castle and part of the Mount Avenue lands fall within a Zone of Archaeological Potential.

Characteristics of the Proposed Development

The proposed development comprises 1,058no. dwellings (765no. houses, 150no. duplex units, and 143no. apartments) including 2no. duplexes with an option to accommodate a childcare facility at ground floor level; a local centre comprising ground floor retail units, a medical unit, and mobility hub; provision of a childcare facility; all in buildings ranging in height from 1 to 6 storeys. All associated and ancillary site development and infrastructural works, hard and soft landscaping and boundary treatment works, including public, communal and private open space; public lighting; surface car parking spaces; bicycle parking; ESB substations; bin stores; provision of a foul sewage pumping

station; laying a foul rising main along Castletown Road from the proposed new access to the development eastward to the Castletown Road and Bellewsbridge Road Junction. The proposed development will be accessed from two new combined vehicular, cyclist and pedestrian junction at Castletown and at Mount Avenue. A separate pedestrian and cyclist access is also provided at Mount Avenue. A Heritage Park, a playing pitch and a site reserved for a future educational/school facility are also being provided.

Summary

The LVIA Report concludes that the development would be in accordance with the various landscape and visual objectives, policies and land use zonings as set out in the Louth County Development Plan 2021-2027 and the Dundalk Local Area Plan 2025 - 2031. The visual impact of the proposed development upon completion and when considered within the context of the cumulative surrounding development will have a long-term neutral moderate visual impact.

2.15 Material Assets (Transportation) (Chapter 14)

This section of the Environmental Impact Assessment Report (EIAR) document has been prepared by DBFL Consulting Engineers and addresses all transport and related sustainability issues including means of vehicular access, pedestrian, cyclist and local public transport connections. The principal objective of this chapter is to quantify any level of impact across the local road network and subsequently ascertain the operational performance of the local road network.

The proposed development comprises 1,058no. dwellings (765no. houses, 150no. duplex units, and 143no. apartments) including 2no. duplexes with an option to accommodate a childcare facility at ground floor level; a local centre comprising ground floor retail units, a medical unit, and mobility hub; provision of a c.194 place childcare facility; all in buildings ranging in height from 1 to 6 storeys. A Heritage Park of c.5Ha. A site reserved for the future development of an educational facility (c. 1.35ha) and playing pitch. All associated and ancillary site development and infrastructural works, hard and soft landscaping and boundary treatment works, including public, communal and private open space; public lighting; surface car parking spaces; bicycle parking; ESB substations; bin stores; provision of a foul sewage pumping station; laying a foul rising main along Castletown Road from the proposed new access to the development eastward to the Castletown Road and Bellewsbridge Road Junction. The proposed development will be accessed from two new combined vehicular, cyclist and pedestrian junction at Castletown and at Mount Avenue. A separate pedestrian and cyclist access is also provided at Mount Avenue. The proposed development is located at lands in the Townlands of Newtownbalregan, Castletown and Farrandreg, at Mount Avenue, Castletown, Dundalk, Co. Louth.

The application will include all infrastructure associated with the development including road/streets layout, footpaths, cycle lanes, and all site services including foul drainage networks, surface water and SuDS drainage networks and systems, and watermains.

Further details of the development proposals, including the site layout drawing, are illustrated in the architects' scheme drawings as submitted with this application.

The purpose of this chapter is to quantify the existing transport environment and to detail the results of assessment work undertaken to identify the potential level of transport impact generated as a result of the proposed residential/commercial development.

In terms of future transport proposals, the Dundalk Local Area Plan (including the Dundalk Local Transport Plan), Cycle Connects, as well as the LCC Development Plan (2021-2027) proposes a number of cycle routes, bus routes and road improvement proposals within the area in proximity to the development site.

A number of policy and guidance documents reviewed as part of this assessment emphasises the requirement for increasing sustainable travel modes such as walking, cycling and public transport. The 'Compact Settlement Guidelines' (January 2024) outlines the car parking requirements for new housing developments. The document states that for new residential units within a 'Peripheral' location should have a maximum of 2 car parking spaces per unit.

A total of 1770 cycle parking spaces are proposed within the development to accommodate residents, visitors and staff. It is also proposed to provide two car sharing vehicles within the mobility hub, for use by both residents and visitors to the site.

Traffic Surveys were carried out in March 2025 on a number of key junctions surrounding the proposed development site.

In order to undertake an assessment of the likely traffic impacts that the proposed development would have on the surrounding road network, a traffic generation assessment was undertaken. Traffic growth rates were applied to background traffic using the TII Project Appraisal Guidelines (PAG). Development trips were generated using the TRICS database. Committed Developments close to the proposed development site were also included as part of the assessment.

A detailed traffic model was developed of the road and junction network. Trips were assigned to the network for the Opening Year (2027) as well as the Future Design Years (2032 and 2042). A traffic impact assessment was undertaken in order to determine whether the impact threshold of 5% was exceeded (as per the TII Traffic and Transport Assessment Guidance which recommended a 10% impact threshold for non-congested road networks and a 5% impact threshold for congested road networks).

Results of the assessment indicate that most junctions are above both the 10% and 5% threshold, and so were subject to further analysis.

The further analysis revealed that 14 of the 15 junctions analysed in the surrounding area will operate within capacity up to and including the 2042 Do Nothing and Do Something Scenarios, Junction 7 (Castletown Road / Ecco Road) operates above capacity, however it is noted that this junction appears to be already over capacity during the Base 2025 year, unrelated to the subject development.

With regards to Junction 7, there are some changes, such as updating the traffic signals at Ecco Road, which has been carried out in the Do Something Model. For example, the left turn lane of Ecco Road is required to wait for an entirely clear junction before it gets an overall green light. The introduction of separate left and right turn greens would allow left turning vehicles from Ecco Road to proceed while vehicles are travelling from Castletown Road (West). These signal changes have been applied to the Do-Something mode which improved the capacity on certain arms.

Also, this junction may be updated as part of a future Active Travel scheme, as both Castletown Road and Ecco Road are proposed Urban Primary Cycle Routes within the CycleConnects and the junction is outlined as being potentially upgraded. There are also additional junction active travel junctions upgrades proposed as part of the Dundalk Local Transport Plan (July 2024).

With regards to Junction 10 (Castletown Road / Bellewsbridge Road), it was found that the signal control is dated, which may be improved greatly through minor changes. It is noted that at present vehicles wishing to turn right from Castletown Road (East) to Bellewsbridge Road are held for the entire green period of the main east-west movements. Changing this turn to a four aspect with right filter as found to greatly improve the junction's capacity and is reflected in the improved junction capacity in the Do Something Scenarios. This change does not require any infrastructural works and simply requires changing the signal phases and signal aspects.

A sensitivity analysis was carried out on Junctions 14 (Site Access / Castletown Road) and 15 (Site Access / Mount Avenue) to analyse the effects of the additional nearby zoned residential lands on the site accesses. For the 2042 Do Something Scenario, both Junction 14 and 15 were within capacity for both the AM and PM Peak, following the introduction of the additional trips from the potential additional 861 residential units, and a 350 student primary school.

In conclusion to the traffic modelling results, it is found that the local road network is not significantly affected by the proposed development.

A separate Mobility Management Plan (MMP) will be prepared as part of this planning application. The MMP presents a number of objectives and targets for reducing private car travel in favour of more sustainable travel modes within the development.

The facilities proposed within the subject development include for 1770 cycle parking spaces, linkages to good public transport services (current and future), reduced parking for residents as well as the

Mobility Hub with car sharing within the development. Together, these measures support a sustainable approach to travel within the development. This will encourage existing and future residents to increase modal shift away from car use to more sustainable modes of transport and this can be achieved by the implementation of the Mobility Management Plan (MMP) which has been prepared for this development.

In conclusion, we believe that the opportunity is available, in terms of transport and traffic, for the planning authority to consider favourably the proposed residential development on the subject site.

The findings of this report, therefore, concludes that there are no traffic or transportation related reasons that should prevent the granting of planning permission for the construction of the proposed residential development on Mount Avenue, Dundalk, Co. Louth.

2.16 Material Assets (Waste) (Chapter 15)

This chapter provides an assessment of the potential impacts of the Proposed Development on waste management services.

All waste materials generated during the construction and operational phase of the Proposed Development will be managed in accordance with the respective waste management plans.

The waste management objectives for the Proposed Development are as follows, and will facilitate material reuse and recycling, where possible, and seek to divert waste from landfill:

- **Prevention:** The Principal Contractor will prevent and minimise waste generation where possible by ensuring large surpluses of construction materials are not delivered to the site through coordination with the suppliers, operating a 'just-in-time' delivery scheme and ensuring sub-contractors conform to the Contractor(s) Construction and Environmental Management Plan (CEMP), being an update to the principles set out in the CEMP (DBFL Consulting Engineers, 2025) submitted with this application;
- **Reuse:** Reusing wastes and surplus materials where feasible and in as many high value uses as possible;
- **Recycle:** Recycling wastes where possible such as introducing on site crushers to produce waste derived aggregates which, subject to appropriate testing and approvals, may be re-used in the Proposed Development; and
- **Disposal:** Where disposal of waste is unavoidable, this will be undertaken in accordance with the Waste Management Act 1996, as amended.

Construction Stage

AWN Consulting (2025a) has prepared a Resource Waste Management Plan (RWMP) and DBFL Consulting Engineers (2025) has prepared a Construction Environmental Management Plan (CEMP) for the construction phase of the Proposed Development at Mount Avenue, Dundalk. The Proposed Development will involve digging up about 206,000 cubic metres of soil for building foundations, roads, and underground services. Around 195,000 cubic metres of this soil will be reused on-site, and the rest will be taken off-site for reuse or disposal (RWMP, 2025a). The management of contaminated soil, if encountered, will be undertaken in accordance with the Land and Soils chapter of the EIAR and the CEMP (DBFL, 2025).

Waste will be segregated on-site, stored in labelled containers, and removed regularly by authorised contractors. Hazardous waste will be handled under strict protocols. Site personnel will be trained in waste identification and handling.

Temporary stockpiling of materials will be managed to prevent mixing and environmental issues. Heavily contaminated materials will be handled according to the CEMP. Site personnel will be trained to identify different waste types. Waste from construction workers will be managed and sent for recycling, recovery, or disposal.

The potential impact from the construction phase on waste recovery and disposal is likely to be short-term, negative, and slight in nature.

Operational Stage

An Operational Waste Management Plan (OWMP) has been prepared for the Proposed Development by AWN Consulting (2025b) to ensure waste management during the operational phase complies with current legal and industry standards. This includes adherence to various acts and regulations such as the Waste Management Act 1996, Protection of the Environment Act 2003, and the National Waste Management Plan for a Circular Economy 2024-2030.

The development will increase municipal waste production, but waste collection is already common in the urban area. Predicted waste types include Mixed Municipal Waste, Dry Mixed Recyclables, Organic Waste, and Glass. Additional waste types like bulky items, WEEE, batteries, textiles, light bulbs, chemicals, and waste oil will be managed separately.

Waste collections must comply with the Waste Contractor's Permit and local bye-laws. Existing waste collection services operate in the local area, and during the operational phase, the Proposed Development will be added to an existing collection route. The OWMP (AWN, 2025b) confirms that sufficient storage capacity and segregation infrastructure will be provided on site to support compliance with national and regional waste policy.

The OWMP aims to achieve high levels of recycling, reuse, and recovery, aligning with European targets. Various contractors offer waste collection services for the residential sector in the LCC region.

The operational phase's impact on municipal waste disposal is expected to be long-term, negative, and slight.

Cumulative Impact

Construction Stage:

Other permitted developments currently under construction within the area are expected to comply with their respective planning conditions, resulting in cumulative waste-related effects that are short-term, neutral, and not significant.

Operational Stage

While the Proposed Development will increase operational waste, the implementation of mitigation measures ensures that cumulative effects will be long-term, imperceptible, and neutral.

Residual Effects

The implementation of the waste management plans in conjunction with best environmental practice and appropriate management of the Proposed Development, will ensure that there are no likely significant adverse effects to waste management as a result of the construction and operational phases of the Proposed Development. The residual effects on waste management during the construction phase are considered to be slight, neutral, direct and short-term for the construction phase and neutral, direct and slight in the long-term for the operational phase.

2.17 Material Assets (Utilities) (Chapter 16)

This chapter of the Environmental Impact Assessment Report (EIAR) examines the likely effects of the proposed Mount Avenue development on key utility services, including surface water drainage, foul drainage, water supply, electricity, gas and telecommunications. It describes the existing network of services in the area, outlines the infrastructure required for the new development and identifies mitigation measures to ensure that all works are carried out without adverse impact on the local environment or service users.

Existing Service Environment

The 38.89 hectare site lies to the west of Dundalk and is a predominately greenfield site with some overhead power lines crossing the proposed development and existing housing surrounding.

Two watercourses, the Cunnicar River to the northwestern boundary of the site and the Castletown River to the southern boundary of the site, are the natural surface-water outfalls for the site. Existing foul sewers, watermains, and telecommunications cables run in the surrounding road networks. Gas

Networks Ireland records show no active gas mains within the site. There are two 38kv overhead powerlines running through the site from the northwestern to southeastern side of the site.

Surface water drainage in the wider area ultimately discharges to the Castletown River.

Foul drainage is served by public sewers that flow to the Boyle O'Reilly Pumping Station, which in turn discharges to the Dundalk wastewater treatment plant where it is treated before discharge to the sea.

Water supply is provided by a 450mm public watermain located along Mount Avenue to the east of the site.

Power is supplied via ESB Networks, with overhead lines running north to south along the lands.

Telecommunications are provided by Eir, which maintains cables in the surrounding roads but none within the site.

Gas services can be found on Mount Avenue Road but no additional gas services pass through the proposed development lands

Proposed Development and Utility Design

The proposed development comprises 1,058no. dwellings (765no. houses, 150no. duplex units, and 143no. apartments) including 2no. duplexes with an option to accommodate a childcare facility at ground floor level; a local centre comprising ground floor retail units, a medical unit, and mobility hub; provision of a c.194 place childcare facility; all in buildings ranging in height from 1 to 6 storeys. A Heritage Park of c.5Ha. A site reserved for the future development of an educational facility (c. 1.35ha) and playing pitch. All associated and ancillary site development and infrastructural works, hard and soft landscaping and boundary treatment works, including public, communal and private open space; public lighting; surface car parking spaces; bicycle parking; ESB substations; bin stores; provision of a foul sewage pumping station; laying a foul rising main along Castletown Road from the proposed new access to the development eastward to the Castletown Road and Bellewsbridge Road Junction. The proposed development will be accessed from two new combined vehicular, cyclist and pedestrian junction at Castletown and at Mount Avenue. A separate pedestrian and cyclist access is also provided at Mount Avenue. The development requires the provision of new and upgraded utility infrastructure, all of which has been designed in accordance with recognised national standards including the Greater Dublin Strategic Drainage Study (GSDS), Uisce Éireann Codes of Practice, the CIRIA SuDS Manual and relevant Irish and European standards for drainage and water networks.

The proposed development is located on a site 38.89 Ha in size with a net developable area of approximately 29.53 Ha, in the Townlands of Newtownbalregan, Castletown and Farrandreg, at Mount Avenue, Castletown, Dundalk, Co. Louth.

Surface water drainage will be managed through a network of SuDS and collecting runoff from roofs, roads and open spaces. Water will be attenuated in 10 nr attenuation tanks and 4 nr attenuation basins providing a combined storage volume of approximately 7906m³, 4102m³ in the northern catchment and 3804m³ in the southern catchment—before discharging in a controlled manner to the Cunnigar and Castletown Rivers. Flow from the northern portion will be restricted to 27 l/s, and from the southern portion to 29 l/s, ensuring that post-development runoff does not exceed existing greenfield rates. Non-return valves will be installed at outlet points to prevent backflow during extreme flood events.

Foul drainage will be served by a new gravity network and due to the sites natural topography, an on-site pumping station will be provided for the northern section of the site. Approximately 670 metres of new 375mm diameter sewer will connect the development to the an existing foul manhole at the junction of Bellewsbridge and Castletown Road. Additional off-site storage of 700m³ will be provided at the Boyle O'Reilly Pumping Station in consultation with Uisce Éireann. All wastewater will ultimately be treated at the Dundalk Wastewater Treatment Plant prior to safe discharge to the sea.

Water supply will be drawn from the existing 450mm main at the northeast boundary. A booster station will ensure a pressure of at least 15 m across the development. A new internal distribution network will branch from this connection, with mains of 225 mm, 180 mm and 125 mm laid along the link road and throughout the neighbourhood.

Power supply will require the diversion of existing overhead ESB lines and the construction of new ducting and poles in coordination with ESB Networks.

Telecommunications and broadband will be extended from the existing Eir network surrounding the site.

Potential Construction-Phase Impacts

Construction activities have the potential to affect existing utilities and the local environment if not carefully managed. Risks include:

Contamination of surface water runoff from silt, fuel, oils or concrete during excavation and earthworks.

Improper discharge of foul drainage from the construction compound before permanent connections are made.

Cross-contamination of the temporary potable water supply to the site compound.

Accidental damage to existing underground or overhead infrastructure, including the diversion of ESB lines and connections to telecommunications services.

Short interruptions to electricity, telecoms or water supply during service diversions.

Without mitigation these impacts would be neutral in quality, short-term in duration and of moderate significance.

Potential Operational Impacts

During operation, the primary concerns relate to:

A reduction in natural groundwater recharge due to increased impermeable surfaces.

Possible contamination of surface water runoff from accidental hydrocarbon leaks on roads or driveways.

Leakage from foul sewers leading to contamination of surface water or groundwater.

However, the drainage and utility networks have been designed in accordance to relevant standards. Demand from the proposed development during the operational phase is not predicted to impact on the existing wastewater, watermain, power, gas and telecoms network. Operational impacts are therefore predicted to be neutral, slight and permanent.

Mitigation Measures

A comprehensive programme of mitigation will be implemented to ensure that construction proceeds without incident:

A Construction and Environmental Management Plan (CEMP) will govern all site activities. This will include detailed method statements for working near live utilities, emergency response procedures and staff training.

Surface water runoff from stripped areas or excavations will be directed to on-site settlement ponds where sediment will be captured before controlled discharge.

Foul drainage from the construction compound will be tankered off site to a licensed facility until a permanent connection is available.

The compound's potable water supply will be protected from contamination and regularly monitored.

Diversion of ESB infrastructure will be coordinated with ESB Networks to minimise power outages, with new ducting or poles installed before existing lines are decommissioned.

Connections to telecommunications and, if required, gas services will be carried out by approved contractors in consultation with the relevant utility providers.

Before operation, all new foul drainage pipes will be pressure tested and inspected by CCTV prior to commissioning. Water conservation measures, such as dual-flush cisterns and low-flow taps, will be

incorporated into building design. Routine maintenance of attenuation basins, non-return valves and surface water controls will ensure continued protection of local watercourses.

Residual Effects and Monitoring

With the mitigation measures in place, residual impacts during construction will be neutral, short-term and moderate. Once the development is complete and operational, residual impacts on water supply, foul drainage, surface water drainage and other utilities will be permanent but imperceptible, as all infrastructure will comply with the highest current standards and be integrated with the public networks. Monitoring of settlement ponds and drainage performance will be undertaken during construction, while no specific long-term monitoring is required beyond normal utility provider maintenance.

2.18 Cultural Heritage (Architectural and Archaeology Heritage) (Chapter 17)

An archaeological, architectural and cultural heritage assessment has been undertaken in advance of a proposed residential development within the townlands of Castletown and Newtownbalregan, County Louth. The assessment aims to ascertain any potential likely and significant impacts that the proposed development may have on the existing cultural heritage resource. This assessment was undertaken by Faith Bailey and Elizabeth Di Vincenzo of IAC Archaeology (IAC).

The northeast portion of the proposed development is situated within the Zone of Archaeological Potential (ZAP) for the historic town of Castletown (LH007-118). The site also borders 'Dún Dealgan', a motte and bailey castle, which is a National Monument in state guardianship (Nat Mon. 388) and a recorded monument (LH007-118007). This site, whilst archaeological in form, is also a significant cultural heritage site, given its links to Cúchulainn and the mythology that survives from Iron Age Ireland.

A souterrain (LH007-118008) is recorded on the southern side of the National Monument and a cist burial (LH007-118009) has been reconstructed on the avenue bank of the motte. Within the proposed development there is a recorded monument that consists of a standing stone (LH007-118006) known as the 'Lia Lingadon', on the northeast slope of the motte. There are a further 25 recorded monuments within a 500m radius of the proposed development area. Of these sites, ten have been subject to archaeological preservation by record.

There are five structures included on the Record of Protected Structures (RPS) within a 500m radius of the proposed development area. The nearest RPS is the Gate Piers (RPS Ref.: D089) to Castletown Castle, c. 165m to the northeast. There is one structure listed in the National Inventory of Architectural Heritage (NIAH) within the study area, which is also listed in the RPS. This comprises a house (NIAH Ref.: 13900737, RPS Ref.: D090), located c. 235m to the northeast.

Given the high archaeological potential of the proposed development area, this assessment has been informed by a programme of geophysical survey and archaeological test trenching. Metal detection was also carried out during the testing. Although a number of archaeological anomalies were identified during the course of the geophysical survey, the targeted programme of test trenching only identified 11 small areas of archaeological potential. These comprised isolated pits for the most part, along with several ditches. The lack of archaeological activity is surprising given the presence of a significance early medieval and medieval monument in the landscape. It is therefore likely that the proposed development area has been primarily in use as agricultural lands for centuries, with earlier habitation possibly located further to the north of the motte at Castletown.

Ground works associated with the construction of the proposed development will result in direct, negative (permanent) impacts on ten of the sites identified during archaeological testing (AA1, 2, 3, 4, 6, 7, 8, 9, 10, 11). Prior to the application of mitigation, the significance of effect is considered to be moderate.

AA5 will be preserved in-situ as part of the development and as such will not be impacted by the proposed construction works. It remains possible that inadvertent direct, negative (permanent) impacts may occur, prior to the application of mitigation, due to the passing of plant or other construction activities.

The proposed development borders 'Dún Dealgán', a motte and bailey castle, which is a National Monument in state guardianship (Nat Mon. 388) and a recorded monument (LH007-118007). The monument will not be directly impacted by the proposed construction works as a 50m buffer has been established between the development and the monument, as shown on Figure 17.9. Construction works have the potential to result in an indirect, negative (temporary) impact on the setting of the monument, and the significance of effect is considered to be moderate.

A standing stone (LH007-118006) is located within the proposed development area, but will be preserved in-situ within the defined buffer area surrounding the motte and bailey castle. Therefore the site will not be directly impacted by construction works associated with the proposed development. Construction works have the potential to result in an indirect, negative (temporary) impact on the setting of the monument, and the significance of effect is considered to be slight.

Groundworks associated with the proposed development have the potential to result in direct, negative (permanent) impacts on small or isolated archaeological features that have the potential to survive beneath the current ground level, outside of the footprint of the excavated test trenches and artefacts that may survive within the topsoil across the area. Prior to the application of mitigation, these effects may range from moderate to significant, depending on the nature, extent and significance of any remains that may be present.

The construction of the proposed development will not result in any direct or indirect impacts on the architectural heritage resource.

As part of the construction of the proposed development a section of the townland boundary that separate Castletown from Newtownbalregan will be removed. The section of the boundary measures c. 250m. This is a direct, negative (permanent) impact with a moderate significance of effect.

Whilst it is noted that preservation in-situ is the preferred manner in which to conserve the archaeological resource, this will not be possible for the small archaeological areas identified at AA1, 2, 3, 4, 6, 7, 8, 9, 10, 11, during archaeological test trenching. As such, these archaeological areas will be preserved by record prior to the commencement of construction. This will be carried out under licence to the National Monuments Service of the DoHLGH.

AA5 will be preserved in-situ as part of the development, but in order to prevent inadvertent impacts from surrounding construction activities, the site will be fenced off during the construction phase.

In addition, the buffer area surrounding the motte and bailey castle (National Monument in state guardianship (Nat Mon. 388), recorded monument LH007-118007) and standing stone (LH007-118006), will be temporarily fenced off during construction, in order to prevent inadvertent impacts during construction.

All topsoil stripping associated with the development will be subject to archaeological monitoring and a strategic programme of metal detecting. These works will be carried out by a suitably qualified archaeologist under licence to the National Monuments Service of the DoHLGH. If any archaeological remains are identified during the course of these works, further mitigation will be required such as preservation in-situ or by record. Any further mitigation will require agreement from the National Monuments Service.

No mitigation measures are required for the architectural heritage resource during the construction phase.

The removal of the townland boundary between Castletown and Newtownbalregan will be subject to archaeological monitoring. This work will be carried out by a suitably qualified archaeologist under licence to the National Monuments Service of the DoHLGH.

As noted above, the proposed development borders 'Dún Dealgán', a motte and bailey castle, which is a National Monument in state guardianship (Nat Mon. 388) and a recorded monument (LH007-118007). The monument will not be directly impacted by the operation of the proposed development as a 50m buffer has been established between the development and the monument. The operation of the development will result in an indirect, negative (permanent) impact on the setting of the monument, although the monument will remain the landmark feature in the area. Sections through the development, showing the roof heights of the development illustrate this.

Currently the motte and bailey is only accessible to the public from Mount Avenue, to the east of the monument. The access to the monument provides no opportunity to view the motte in the landscape, as the proposed development area is currently under private ownership. Whilst the operation of the proposed development will result in an impact on the setting of the monument, this is offset by the fact that public access to the monument will be significantly improved and it will be visible in its current landscape setting from the south, west and north.

The standing stone (LH007-118006) is located within the proposed development area and will be preserved in-situ within the defined buffer area surrounding the motte and bailey castle. Therefore, the site will not be directly impacted by the operation of the proposed development. The operation phase does have the potential to result in an indirect, negative (permanent) impact on the setting of the monument, and the significance of effect is considered to be slight. This is offset by the fact that the standing stone, as part of the operation, will become accessible to the public. This is an improvement as the proposed development area is currently in private ownership.

The operation of the proposed development will not result in any direct or indirect impacts on the architectural and cultural heritage resource.

In order to enhance the public appreciation of the motte and bailey castle and recorded standing stone, which will be set within public open space, information panels will be erected at appropriate locations within the development area that provide information on these monuments and the results of archaeological investigations carried out during the construction of the development.

All proposed and permitted developments within the 500m study area have been reviewed for potential cumulative construction and operation impacts upon the archaeological, architectural and cultural heritage resource. No cumulative impacts have been identified upon the archaeological resource, as the archaeological remains within the proposed development area will be preserved by record or in-situ. No surrounding developments will result in any effects on the Motte and Bailey Castle.

No cumulative construction or operation impacts have been identified upon the architectural or cultural heritage resource.

Following the completion of mitigation measures there will be no significant negative residual construction impacts on the archaeological, architectural and cultural heritage resource.

Following the completion of the mitigation measures, there will be a slight positive residual operation impact on the recorded motte and bailey castle and standing stone.

2.19 Risk Management (Chapter 18)

This assessment describes the proposed development in respect of its potential vulnerability to major accidents/ disasters. It also considers the potential for the development to give rise to major accidents/ disasters.

The scope and methodology of this assessment is based on the understanding that the proposed development will be designed, built and operated in line with best international current practice. As such, major accidents resulting from the proposed development would be very unlikely.

A risk analysis-based methodology that covers the identification, likelihood and consequence of major accidents and / or disasters has been used for this assessment. There are no Seveso sites in the vicinity of the site.

No potential scenarios during the construction phase were identified as requiring further assessment.

2.20 Summary of Mitigation Measures (Chapter 19)

This Chapter provides a summary of all the mitigation and monitoring measures proposed throughout the EIAR document for ease of reference for the consent authority and all other interested parties.

2.21 Summary of Interactions (Chapter 20)

This Chapter provides a summary of all the residual impacts identified throughout the EIAR document for ease of reference for the consent authority and all other interested parties.

2.22 Summary of Residual Impacts and Cumulative Impacts (Chapter 21)

This Chapter identifies the principal interactions between the potential impacts of the environmental factors identified in Chapters 5-18 inclusive, and as well as cumulative impacts arising based on best scientific knowledge.

All potential interactions have been addressed as required throughout the EIAR. During each stage of the assessment contributors have liaised with each other (where relevant) to ensure that all such potential interactions have been addressed.